

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

All claims currently being amended are shown with deleted text struckthrough or double bracketed and new text underlined. Additionally, the status of each claim is indicated in parenthetical expression following the claim number.

The current disposition of the claims are as follows: Claims 69-73, 85-87, and 130-132 are pending in this Application; Claims 69-73, 85-87, and 130-132 are rejected by the Examiner.

In response, Applicants takes the following actions: Applicants amends Claims 69, 70, 85, and 87. Applicants traverses Examiner's rejections of Claims 69-73, 85-87, and 130-132.

WHAT IS CLAIMED IS:

1-68. (Canceled)

69. (Currently Amended) A process comprising:

- (a) derivatizing a carbon nanotube with a diazonium specie, wherein derivation occurs along the sidewall of the nanotube; and
- (b) covalently attaching a molecular wire to the derivatized carbon nanotube.

70. (Currently Amended) A process comprising:

- (a) derivatizing a carbon nanotube with a diazonium specie, wherein derivation occurs along the sidewall of the nanotube; and
- (b) covalently attaching a molecular switch to the derivatized carbon nanotube.

71. (Previously Presented) The process of claim 69, wherein the carbon nanotube is a single-wall carbon nanotube.

72. (Previously Presented) The process of claim 69 further comprising connecting a molecular electronic device to the molecular wire.
73. (Previously Presented) The process of claim 69, wherein the molecular wire comprises an oligo(phenylene ethynylene) molecular wire.
74. (Withdrawn) A product comprising:
- (a) derivatized carbon nanotube; and
 - (b) a molecular wire covalently attaching to the derivatized carbon nanotube.
75. (Withdrawn) A product comprising:
- (a) derivatized carbon nanotube; and
 - (b) a molecular switch covalently attaching to the derivatized carbon nanotube.
76. (Withdrawn) The product of claim 74, wherein the carbon nanotube is a single-wall carbon nanotube.
77. (Withdrawn) The product of claim 74 further comprising a molecular electronic device connected to the molecular wire.
78. (Withdrawn) The product of claim 74, wherein the molecular wire comprises an oligo(phenylene ethynylene) molecular wire.
- 79-84. (Canceled)
85. (Currently Amended) A method for derivatizing carbon nanotubes comprising:
- (a) preparing an assembly, wherein
 - (i) the assembly comprises a first plurality of carbon nanotubes and a second plurality of carbon nanotubes; and
 - (ii) wherein the carbon nanotubes in the first plurality and the carbon nanotubes in the second plurality [[Plurality]] can be individually addressed electronically;

- (b) immersing the assembly in a diazonium specie;
 - (c) applying a negative potential to the assembly to cause the first plurality to essentially come in contact with the second plurality;
 - (d) electrochemically reacting the assembly with the diazonium specie so as to derivatize the sidewalls of the nanotubes; and
 - (e) connecting functionalized molecules to the assembly.
86. (Previously Presented) The method of claim 85, wherein the functionalized molecules comprise molecules that function in a capacity selected from the group consisting of molecular switches and molecular wires.
87. (Currently Amended) A method for derivatizing carbon nanotubes comprising:
- (a) preparing an assembly, wherein
 - (i) the assembly comprises a first plurality of carbon nanotubes and a second plurality of carbon nanotubes; and
 - (ii) wherein the carbon nanotubes in the first plurality and the carbon nanotubes in the second plurality can be individually addressed electronically;
 - (b) immersing the assembly in a diazonium specie;
 - (c) applying a negative potential to the assembly to cause the first plurality to essentially come in contact with the second plurality;
 - (d) electrochemically reacting the assembly with the diazonium specie so as to derivatize the sidewalls of the nanotubes; and
 - (e) operatively connecting molecular electronic devices to the assembly.
- 88-93. (Canceled)
94. (Withdrawn) A product made by the process comprising:
- (a) preparing an assembly, wherein
 - (i) the assembly comprises a first plurality of carbon nanotubes and a second plurality of carbon nanotubes; and

- (ii) wherein the carbon nanotubes in the first plurality and the carbon nanotubes in the second plurality can be individually addressed electronically;
 - (b) immersing the assembly in a diazonium specie;
 - (c) applying a negative potential to the assembly to cause the first plurality to essentially come in contact with the second plurality;
 - (d) electrochemically reacting the assembly with the diazonium specie; and
 - (e) connecting functionalized molecules to the assembly.
95. (Withdrawn) The product of claim 94, wherein the functionalized molecules comprise molecules that function in a capacity selected from the group consisting of molecular switches and molecular wires.
96. (Withdrawn) A product made by the process comprising:
- (a) preparing an assembly, wherein
 - (i) the assembly comprises a first plurality of carbon nanotubes and a second plurality of carbon nanotubes; and
 - (ii) wherein the carbon nanotubes in the first plurality and the carbon nanotubes in the second plurality can be individually addressed electronically;
 - (b) immersing the assembly in a diazonium specie;
 - (c) applying a negative potential to the assembly to cause the first plurality to essentially come in contact with the second plurality;
 - (d) electrochemically reacting the assembly with the diazonium specie; and
 - (e) operatively connecting molecular electronic devices to the assembly.
- 97-129. (Canceled)
130. (Previously Presented) The process of claim 71 further comprising connecting a molecular electronic device to the molecular wire.

131. (Previously Presented) The process of claim 71, wherein the molecular wire comprises an oligo(phenylene ethynylene) molecular wire.
132. (Previously Presented) The process of claims 70, wherein the carbon nanotube is a single-wall carbon nanotube.
133. (Withdrawn) The product of claim 76 further comprising a molecular electronic device connected to the molecular wire.
134. (Withdrawn) The product of claim 76, wherein the molecular wire comprises an oligo(phenylene ethynylene) molecular wire.
135. (Withdrawn) The product of claim 75, wherein the carbon nanotube is a single-wall carbon nanotube.